

PariPoser® Interconnect Technology

Working in Today's World means that electronic devices are smaller, faster, smarter, and far more complex than ever before.

The need for packaged devices operating at higher frequencies, presents a new set of challenges in the test and production environment.

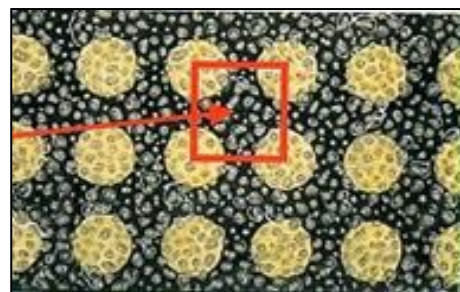
Paricon Technologies, provides a state of the art family of high performance contact materials, specifically designed for the advanced needs of the electronic industry.

Our unique contact system has been applied at virtually every level of interconnection, such as test and burn-in sockets, production level sockets, cable to board connectors and mezzanine connectors.

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To achieve optimum performance with PariPoser® materials, it is important to understand their structure and to provide the correct mechanical interface. Numerous studies have shown that when the design rules are followed, very high performance electrical interconnection capability can be obtained for a wide range of applications including test, burn-in and production interconnection products.

The PariPoser® fabric is comprised of columns of silver-plated nickel particles uniformly distributed in a thin sheet of silicone. Typical sheet thickness ranges from 0.0021" to 0.015". When PariPoser fabric is compressed between a pair of flat conductors, the silicone elastically moves allowing the columns to electrically interconnect the conductors. The contact loading force is generated by the elastic displacement of the silicone. Paricon markets these products under the name "BallWire® contact". Unlike wire based elastomeric products, BallWire contacts are not easily damaged by excessive loading and are not subject to Euler Column failure. The nickel particles are very hard and are very effective at penetrating oxide layers.



The column density is such that multiple columns will contact each interconnection pad. The PariPoser column density is much greater than the contact spacing. Multiple BallWire columns will be present at each contact location. As a result, no orientation of the material, relative to the contact, is required.

PariPoser films do not compress under load but move elastically allowing the contact pads to make intimate connection with the BallWire columns.

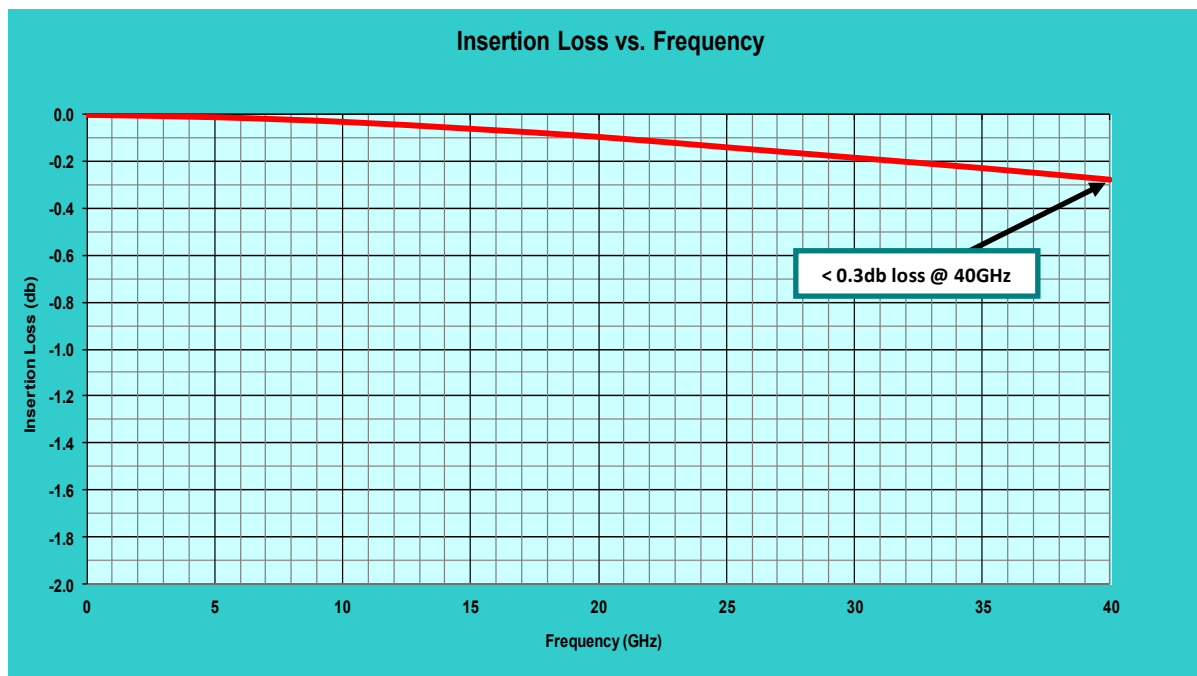
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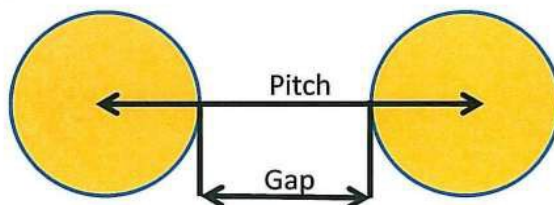
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Contact Pitch (mm)	Minimum Gap (mm)	Minimum Pad Area (mm) ²	Minimum Combined Pad Height (Cu weight oz)	Minimum Combined Pad Height (inches)	Sheet Thickness (inches)	Sheet Thickness (mm)
1.27	0.51	0.46	2.00 oz	0.0028	0.0150	0.38
1.00	0.40	0.28	2.00 oz	0.0028	0.0100	0.25
0.80	0.32	0.18	1.50 oz	0.0021	0.0087	0.22
0.65	0.26	0.12	1.50 oz	0.0021	0.0068	0.17
0.50	0.20	0.071	1.00 oz	0.0014	0.0056	0.14
0.40	0.16	0.045	1.00 oz	0.0014	0.0044	0.11
0.30	0.12	0.025	0.75 oz	0.00105	0.0034	0.09
0.20	0.08	0.011	0.50 oz	0.0007	0.0025	0.06
0.10	0.04	0.0028	0.50 oz	0.0007	0.0021	0.05

Gap applies to pads on both surfaces

Area is projected interconnection area between opposing pads



Features and Benefits.....

- High Bandwidth (>70GHz)
- Low Profile (<0.4mm)
- Fine Pitch (<0.2mm)
- Low Loss (<0.3dB@40GHz)

Markets.....

- Telecom
- Computer
- Instrumentation
- Medical
- Automotive
- Military
- Space

Applications.....

- Board to Board
- Memory
- Processor
- Test Fixtures
- Burn-in Sockets
- Military Equipment
- Ground and Flight Space Application

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	1.27mm	1.0mm	0.8mm	0.65mm	0.5mm	0.4mm	0.3mm	0.2mm	0.1mm
Construction	Ni/Ag Silicone Sheet	Ni/Ag Silicone Sheet	Ni/Ag Silicone Sheet	Ni/Ag Silicone Sheet	Ni/Ag Silicone Sheet	Ni/Ag Silicone Sheet	Ni/Ag Silicone Sheet	Ni/Ag Silicone Sheet	Ni/Ag Silicone Sheet
Thickness	0.38mm	0.25mm	0.22mm	0.17mm	0.14mm	0.11mm	0.09mm	0.06mm	0.05mm
Combined Min Pad Height (3)	0.071mm	0.071mm	0.053mm	0.053mm	0.036mm	0.036mm	0.027mm	0.018mm	0.018mm
Pad Diameter	0.76mm	0.6mm	0.48mm	0.39mm	0.3mm	0.24mm	0.18mm	0.12mm	0.06mm
Pad Gap (4)	0.51mm	0.4mm	0.32mm	0.26mm	0.20mm	0.16mm	0.12mm	0.08mm	0.04mm
Pad Loading (g/contact) (5)	80.6	50	32	21.1	12.5	8	4.5	2	0.5
Temperature Range	-50C to 210C	-50C to 210C	-50C to 210C	-50C to 210C	-50C to 210C	-50C to 210C	-50C to 210C	-50C to 210C	-50C to 210C
Normalized Thermal Conductivity (7,8)	1300W/m ² K°	2000W/m ² K°	2200W/m ² K°	2900W/m ² K°	3600W/m ² K°	4500W/m ² K°	5600W/m ² K°	8300/m ² K°	10000W/m ² K°
Current: Amp/0.5mm ² /pad (6)	40	20	15	12	8	6	2	1	1/4
Breakdown Voltage	Exceeds breakdown voltages of Printed Circuit Board								
Insertion Loss at 40Ghz	<1.0dB	<0.6dB	<0.5dB	<0.4dB	<0.3dB	<0.3dB	<0.2dB	<0.1dB	<0.05dB
Out Gassing (CVCM)	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%	0.07%

Please Note:

- 1) Data provided is for guidance only.
- 2) Performance may vary in application
- 3) Pad Height includes total height of opposing pads
- 4) Gap applies to pads on both surfaces
- 5) Pad loading is approx. and has a number of determination factors
- 6) Single Contact @ 20°C
- 7) Bulk Thermal Conductivity is 0.5 watts/(mK°)
- 8) Bulk Thermal Conductivity normalized to sheet thickness

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HIGH PERFORMANCE

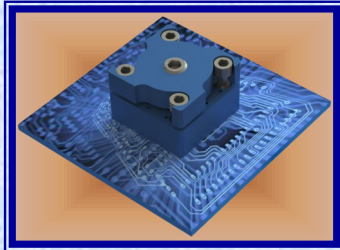
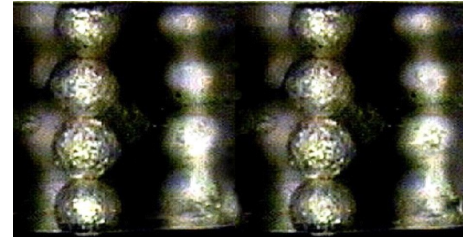


PARICON[®]
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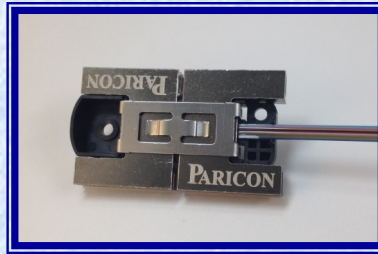
RUPP
tronik

BALLWIRE[®] CONTACTS CONNECT

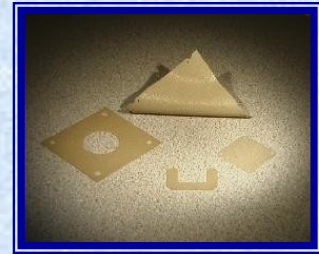
FINE PITCH AT 50 GHz+



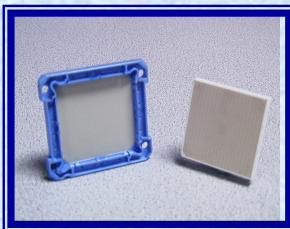
APPLICATION SOCKETS



OPTICAL TRANSCEIVER SOCKETS



CUSTOM INTERPOSERS



PRODUCTION SOCKETS



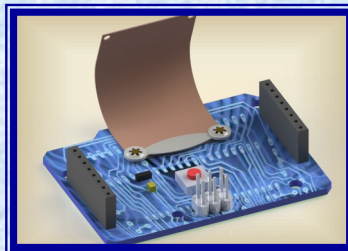
CUSTOM SOCKETS



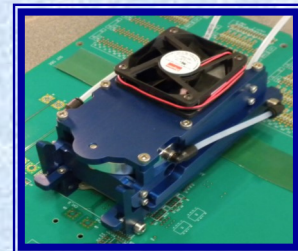
AIR CLAMP SOCKETS



CALIBRATED LOAD SOCKETS



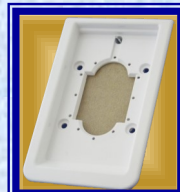
FLEX-TO-BOARD INTERCONNECT



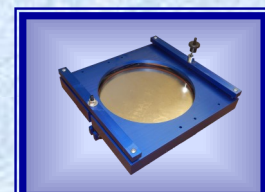
CUSTOM FIXTURES



BGA TEST SOCKETS



FLUIDIC DEVICE SOCKETS



WAFER SCALE CONTACTORS

A PROVEN HIGH PERFORMANCE APPROACH TO:

- **CONNECT DEVICES IN A TEST AND BURN-IN ENVIRONMENT**
- **LOW LOSS PERFORMANCE AT ALL LEVELS OF INTERCONNECTION**
- **CUSTOM INTERCONNECTIONS FOR IC'S IN TEST/PRODUCTION EQUIPMENT**

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